

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A particulate, modified chromium oxide catalyst for the polymerisation of ethylene or ethylene with  $\alpha$ -olefins, comprising:

a) a chromium-oxide catalyst comprising a chromium oxide mainly in a bivalent oxidation state combined with an inorganic support wherein the catalyst contains 0.4% to 10% by weight of Cr; 0.1% to 0.6% by weight of Zr or Hf; and 5% to 20% by weight of Al; calculated as metals based on the total weight of the catalyst,

b) a transition metal compound comprising at least one cyclopentadienylic ring bonded to said transition metal, which cyclopentadienylic ring may contain hetero atoms, be unsubstituted or substituted, bonded to the transition metal through a bridge, optionally annealed to other substituted or unsubstituted ring structures, and if two cyclopentadienyl rings are present they may be bonded to each other through a bridge, and

c) an aluminoxane;

said transition metal compound and said aluminoxane being impregnated in said chromium oxide catalyst.

2. (Currently Amended) A catalyst according to claim 1, ~~characterised in that~~ wherein said inorganic support contains above 85% by weight of silica.

3. Canceled.

4. (Currently Amended) A catalyst according to claim 1, ~~characterised in that~~  
wherein the transition metal is selected from the group ~~comprising~~ consisting of titanium,  
zirconium and hafnium.

5. (Currently Amended) A catalyst according to claim 1, ~~characterised in that~~  
wherein the aluminosilicate is methylaluminosilicate.

6. Canceled.

7. (Currently Amended) A catalyst according to claim 6, ~~characterised in that~~  
wherein the catalyst contains 0.4 to 1% by weight of Cr, about 0.2% by weight of Zr, and  
about 5% by weight of Al.

8. (Currently Amended) A catalyst according to claim 1, ~~characterised in that~~  
wherein said catalyst has the shape of spherical or spheroidal particles.

9. (Currently Amended) A method for the preparation of a catalyst for the  
polymerisation of ethylene, or ethylene with  $\alpha$ -olefins, ~~characterised by~~ said method  
comprising the steps of:

a) subjecting a chromium oxide catalyst precursor, which comprises a chromium  
oxide compound combined with an inorganic support, to a temperature in the range of  
from 400 to 950 °C under oxidising conditions,

b) subjecting the oxidised catalyst precursor obtained in step a) to reducing  
conditions to obtain a major part of the chromium in a divalent oxidation state wherein  
the catalyst contains 0.4% to 10% by weight of Cr; 0.1% to 0.6% by weight of Zr or Hf;  
and 5% to 20% by weight of Al; calculated as metals based on the total weight of the

catalyst, and thereafter

c) ~~b)~~ impregnating the obtained chromium catalyst separately or simultaneously with a catalyst activator and with a transition metal compound which comprises at least one cyclopentadienylic ring bonded to said transition metal and at least one ligand selected from the group comprising alkoxy, amido and hydrocarbyl radicals, halogen and hydride bonded to said transition metal, which cyclopentadienylic ring may contain hetero atoms, be unsubstituted or substituted, be bonded to said transition metal through a bridge, and optionally annealed to other substituted or unsubstituted ring structures, and if two cyclopentadienyl rings are present they may be bonded to each other through a bridge, and

e) d) subjecting the thus obtained particulate catalyst to drying conditions.

10. Canceled.

11. (Currently Amended) A polyethylene produced by the homopolymerisation of ethylene or copolymerisation of ethylene with an  $\alpha$ -olefins in the presence of a catalyst according to ~~any of the preceding claims~~ claim 1 under conditions of continuous feeding of reactants and removal of polymerisate.

12. Canceled.

13. (Currently Amended) A catalyst according to claim 2, ~~characterised in that~~ wherein the transition transition metal is selected from the group comprising consisting of titanium, ~~zirconium~~ zirconium and hafnium.

14.-20. Canceled.